

REMARKS

The Final Office Action of January 5, 2010 has been carefully reviewed. The Applicants respectfully request the Examiner to reconsider the rejections and allow the pending claims in view of the following remarks.

Claims 1-5 and 7-10 are pending. Claim 6 is canceled. Claims 11-39 are withdrawn from consideration. Claim 1 is amended for reasons unrelated to patentability. Support for the amendments to claim 1 may be found in original claim 6. No new matter is added.

Specification

Paragraphs 0063 and 0065 have been amended to correct a typographical error. Specifically, reference numeral 44 has been corrected to reference numeral 43. Support for this amendment may be found in amended Figures 6, 7, and 9-13. No new matter is added.

Paragraph 0069 has been amended to correct a typographical error. Specifically, “mold 41” has been corrected to “molding machine 41.” Support for this amendment may be found in amended Figures 6, 7, and 9-13. No new matter is added.

Drawings

The Office Action objected to Figures 7, 9, 11, and 13 under the assertion that reference characters “43” and “44” were both identified as designating a molded article and because reference character “41” was used to designate both “molding machine” and “mold.” The specification has been amended accordingly, as described above. Thus, no new drawing changes are required. Accordingly, this objection should now be overcome.

Asserted Rejections

The Office Action rejects claims 1, 5-7 and 10 as obvious under 35 USC §103(a) over U.S. Patent No. 5,294,394 (Sakai) in view of U.S. Publication No. 2002/0009935 (Hsiao). The Office Action rejects claims 2 and 8 as obvious under 35 USC §103(a) over Sakai, Hsiao, and U.S. Publication No. 2003/0161989 (Funakoshi). The Office Action rejects claims 3 and 9 as obvious under 35 USC §103(a) over Sakai, Hsiao, and U.S. Patent No. 6,749,934 (Nagayama). The Office Action rejects claim 4 as obvious under 35 USC §103(a) over Sakai, Hsiao, and EP Patent Application No. 0945253 A2 (Bassett). These rejections are all respectfully traversed.

Applicants respectfully submit that the presently claimed invention is non-obvious in light of MPEP 2143.01 VI, which reads as follows:

“If the proposed prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious.”

The principle of operation of Sakai is to have reinforced strengths at ribbed portions and narrow sections on the plate material. According to column 1, lines 59- 63 of Sakai, “it is unfavorable to prepare the whole molded article with such resin and fibrous reinforcement, because the portion required to prevent cracks and deformations is only a part of the molded article.”

In this light, Sakai teaches that “In the case of using a mold having a ribbed portion and a narrow section, where only the resin of the plate material can flow in the mold and the fibrous reinforcement of the plate material does not flow well a prescribed amount of the sheet prepreg having a desired size is maintained above the flowable temperature of the thermoplastic resin, and sufficiently packed in the ribbed portion or the narrow section in the mold.” Therefore, the principle of operation of Sakai is to have a sheet prepreg on the plate material, not in the whole area but in a partial area.

The principle of operation of Hsiao is to make a fiber reinforced composite sandwich structure, meaning that prepregs encompass a honeycomb core, in order to prevent core-crush. According to paragraph [0002], “The honeycomb core composites are formed from a lay-up of prepreg skin plies encompassing a honeycomb core, the latter typically having beveled edges.” According to paragraph [0004], “Partial collapse of the honeycomb core during curing of the composite, known in the industry as “core crush”, is a particularly common reason for rejection of cured panels. Core crush is typically observed in the beveled edge or chamfer region of the honeycomb structural part.”

In this light, Hsiao teaches that “The present invention provides a core crush resistant prepreg for use in making a fiber reinforced composite sandwich structure. Use of the prepreg of this invention, can significantly reduce the degree of core crush as compared to conventional structures.” Therefore, the principle of operation of Hsiao is to encompass a honeycomb core with prepregs in order to prevent core-crush.

In this light, the combination of Sakai and Hsiao would require a substantial reconstruction and redesign of the elements in Sakai or Hsiao, as well as a change in the basic principle under which the Sakai and Hsiao constructions were designed to operate, as follows:

Firstly, Sakai is to have reinforced strengths at ribbed portions and narrow sections on the plate material, whereas Hsiao is to make a fiber reinforced composite sandwich structure, which means that prepregs encompass a honeycomb core. Therefore, when Sakai and Hsiao are combined, Sakai should change “ribbed portions and narrow sections” to a “whole portion”, entailing the changing of the basic principle of Sakai. Alternatively, when Sakai and Hsiao are combined, Hsiao could not encompass a honeycomb core with prepregs because Sakai teaches that the portion required to prevent cracks and deformations is only a part of the molded article.

Secondly, because Hsiao's main purpose is to prevent core crush of a honeycomb core, when Sakai and Hsiao are combined, the honeycomb core is an essential component. Alternatively, Sakai must not have any honeycomb core because Sakai is related to a molded article. Please note that when a honeycomb core is molded, it is clear that the honeycomb core is completely crushed.

In consideration of the above, it is clear that it is substantially impossible to combine Sakai and Hsiao, and not in a manner that results in the conclusion that the claims are obvious. Therefore, the Examiner's rejection based on the combination of Sakai and Hsiao is not sound and should be withdrawn.

In addition, to further differentiate the present invention from Sakai, and to lend support to the above reasoning, the term "whole" has been added to claim 1. Furthermore, the technical content of claim 6, which is not related to a honeycomb, has been incorporated into claim 1 to distinguish the present invention from Hsiao.

This amendment has been provided solely to facilitate expeditious prosecution of this application. As shown above, the rejection is incorrect.

CONCLUSION

The Applicants respectfully submit that the application, in its present form, is in condition for allowance. If the Examiner has any questions or comments or otherwise feels it would be helpful in expediting the application, the Examiner is encouraged to telephone the undersigned at (972) 731-2288. The Applicants intend this communication to be a complete response to the Final Office Action mailed January 5, 2010.

The Commissioner is hereby authorized to charge payment of any fee associated with any of the foregoing papers submitted herewith or any fees during the prosecution of the present case to Deposit Account No. 50-1515, Conley Rose, P.C.

Respectfully submitted,

CONLEY ROSE, P.C.

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